

WHAT IS CLAIMED IS:

1. A universal serial bus (USB) communication method comprising:
determining in advance a communication data format between a host computer and a device driver so that a packet formed by the communication data format includes a report ID that indicates a size of the packet and transmission data;
adding, at a time of transmission, the report ID indicating the size to the transmission data at a head portion of the packet; and
transmitting the packet with the report ID.
2. The USB communication method according to claim 1, further comprising:
preparing in advance a plurality of packets with different predetermined sizes;
selecting a minimum-sized packet from the packets which is capable of accommodating the transmission data; and
transmitting the minimum-sized packet with the report ID.
3. The USB communication method according to claim 2, further comprising:
filling a remaining blank portion of the packet with dummy data when the transmission data has a packet size less than the minimum-sized packet; and
transmitting the minimum-sized packet having a data length of one of the predetermined sizes.
4. The USB communication method according to claim 1, wherein the device driver is a card reader.

5. A universal serial bus (USB) communication method comprising:

determining in advance a communication data format between a host computer and a device driver so that a packet formed by a communication data format includes a report ID that indicates a presence or an absence of a succeeding packet and transmission data;

adding, at the time of transmission, the report ID indicating the presence or the absence of the succeeding packet to the transmission data at a head portion of the packet to be transmitted; and

transmitting the packet with the report ID.

6. The USB communication method according to claim 5, further comprising:

setting in advance, the packet consisting of the report ID and the transmission data to be a predetermined size;

setting in advance, an ID code "presence" which indicates the presence of the succeeding packet and an ID code "absence" which indicates the absence of the succeeding packet;

adding, at the time of transmission, the ID code based on the presence or the absence of the succeeding packet to the transmission data at the head portion of the packet to be transmitted; and

transmitting the packet with the ID code.

7. The USB communication method according to claim 6, further comprising:

filling a remaining blank portion with dummy data in the packet having the ID code "absence"; and

transmitting the packet having a data length of the predetermined size.

8. The USB communication method according to claim 5, further comprising:
providing the driver as a card reader;

adding the ID code to the packet based on the presence or the absence of the succeeding packet at the head portion of the packet to be transmitted, when the packet is transmitted from the card reader to the host computer; and

transmitting the packet with the ID code.

9. A computer system comprising:

a host computer;

a device driver which is in communication with the host computer;

a universal serial bus (USB) communication line for an human interface device (HID) specification which connects the host computer and the device driver; and

a communication data format which is used between the host computer and the device driver and designed so that a packet formed by the communication data format includes a report ID that indicates a size of the packet and transmission data,

wherein, at a time of transmission, the report ID indicating the size is added to the transmission data at a head portion of the packet and the packet with the report ID is transmitted.

10. The computer system according to claim 9, further comprising a plurality of packets with predetermined different sizes, wherein a minimum-sized packet of the packets which is capable of accommodating the transmission data is selected and the minimum-sized packet with the report ID is transmitted.

11. The computer system according to claim 10, further comprising dummy data which are filled in a remaining blank portion of the packet when the transmission

data is less than the minimum-sized packet, wherein the minimum-sized packet having a data length of one of the predetermined sizes is transmitted.

12. The computer system according to claim 9, wherein the device driver is a card reader.

13. A computer system comprising:
a host computer;
a device driver which is communicated with the host computer;
a universal serial bus (USB) communication line for a human interface device (HID) specification which connects the host computer and the device driver; and
a communication data format which is used between the host computer and the device driver and designed so that a packet formed by the communication data format includes a report ID that indicates a presence or an absence of a succeeding packet and transmission data;

wherein, at the time of transmission, the report ID indicating the presence or the absence of the succeeding packet is added to the transmission data at a head portion of the packet and the packet with the report ID is transmitted.

14. The computer system according to claim 13, further comprising an ID code "presence" which indicates the presence of the succeeding packet and an ID code "absence" which indicates the absence of the succeeding packet, wherein the packet having of the report ID and the transmission data is set to be a predetermined size and, at the time of transmission, adding the ID code based on the presence or the absence of the succeeding packet to the transmission data at the head portion of the packet to be transmitted and the packet with the ID code is transmitted.

15. The computer system according to claim 14, further comprising dummy data which are filled in a remaining blank portion in the packet having the ID code "absence", wherein the packet having a data length of the predetermined size.

16. The computer system according to claim 13, wherein the device driver is a card reader, and when the packet is transmitted from the card reader to the host computer, the ID code is added to the packet based on the presence or the absence of the succeeding packet at a head portion of the packet to be transmitted and the packet is transmitted with the ID code.

17. The USB communication method according to claim 1, further comprising determining the size of the packet as a number of bytes.

18. The USB communication method according to claim 5, further comprising determining the size of the packet as a number of bytes.

19. The computer system according to claim 9, wherein the size of the packet is determined as a number of bytes.

20. The computer system according to claim 13, wherein the size of the packet is determined as a number of bytes.